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# Avalanche Notes

U.S. Forest Service  
Westwide Avalanche Network

## FEBRUARY 1992

Call it the February Massacre. From February 4 to the 29th, 12 people died by avalanche in a series of accidents in six western states. It was the worst one-month death toll since accurate records have been kept (1950), and perhaps since February 1926, when 40 died at Bingham Canyon, UT. We'll look at these accidents in some detail, but first let's look at February's weather.

February, like December and January, brought below-normal snow to most of the West. There were exceptions, though: the Sierra of California weathered an extended storm period from the 6th-22nd; Alyeska, AK, once more was above normal; and a few sites in Colorado got lucky. The winter's low snows going into February contributed directly to the avalanche accidents of February: Over the vast majority of the West there's been widespread depth-hoar formation, not only in the Rocky Mountains but also in the Sierra; and in the region of southwest Montana and northwest Wyoming, a thick, deadly layer of buried surface hoar plagued the backcountry.

Alyeska got snow on the 1st-6th (18" on the 3rd), was dry from the 7th-22nd, saw a large storm from the 23rd-29th (26" on the 28th), and finished the month with 110% of normal. An avalanche cycle struck the area on the 24th-28th. The Cascades of Washington and Oregon lay between storm tracks hitting Alaska and California, and wound up with far-below-normal snows: Mt. Rainier and Mt. Hood Meadows both got 58% of normal, and Stevens Pass, 40%.

The Sierra was rocked by a series of storms beginning on the 6th. These brought intense, dense snows to the high elevations and rain below. (At one point during the storm at Mt. Baldy, CA, there was a report of 8" of snow in 45 minutes -- certainly world-class caliber if it were verifiable.) June Mt. recorded 36" on the 11th-12th, and another 24" on the 15th. On the 15th-16th, Alpine Meadows reported 35"; Squaw Valley, 37"; and Sugar Bowl, 42". A major avalanche cycle swept the Sierra from the 11th-20th. For the month, Mammoth Mt. got 110% of normal snow; Alpine Meadows, 130%; and Squaw Valley, 140%.

The Intermountain area was dry the first week of February, got light snow the next two weeks, and was dry the final week. In Montana, Bridger Bowl got 40% of normal; Big Mountain, 47%; and Big Sky, 86%. Sun Valley, ID got 78%; Jackson Hole, WY, 76%; Teton Pass, WY, 59%; and Snowbird, UT, 74%.

In Colorado, Vail earned most-favored status, got a boost with 26" on the 17th-18th, and finished the month with 130% of normal. Beaver Creek and Monarch both got 100%; Arapahoe Basin and Crested Butte, 95%; Berthoud Pass, Copper Mt., and Sunlight, 92%; Wolf Creek and Purgatory, 82%; Winter Park and Telluride, 79%; Gothic, 75%; Aspen Highlands, 65%; and Breckenridge, 60%. Taos, NM came in with 62%.

In February, a total of 47 avalanche incidents were reported, resulting in 61 people caught, 11 partly buried, 18 buried, 8 injured, and 12 killed. The death toll may actually be 13: a backcountry skier near Vail, CO has been missing since February 18. In chronological order, the serious events were:

February 4, Cooke City, MT: A 26-year-old snowmobiler was high-marking on Henderson Mt. and got stuck. The avalanche released when a second snowmobiler came to his aid. The victim was buried 3-1/2 feet deep for 80 minutes and died of suffocation. The avalanche failed on buried surface hoar.

February 11, Mt. Baldy, CA: Two skiers left the ski area boundary and apparently triggered a large avalanche that fell some 1,900 feet vertical. The avalanche funneled into a gully and left 20-30 feet of debris. The continuing storm then buried the debris under another 10 feet of snow. The victims' bodies won't be found until spring or summer.

February 12, La Sal Mtns, UT: A party of six backcountry skiers (wearing beacons and shovels) were climbing a gentle slope when the snow collapsed around them. Seconds later an avalanche released on the steeper slope above. All six were caught, five were totally buried (though one got a hand to the surface), and one was partly buried. The partly buried victim dug himself out in about 30 minutes, he then helped dig out the victim with a hand out, and these two began a beacon search for the missing victims. They found all four, but all had died. One of these was the head of the US Forest Service La Sal Avalanche Forecast Center.

February 17, Squaw Valley, CA: Two snowcats were hit by an avalanche, and one sustained damage of \$4,000.

February 17, near Mt. Rose, NV: A backcountry skier triggered an avalanche that swept him into a tree. The victim broke the tib-fib in both legs.

February 22, Yellowstone Nat. Park, WY: A 26-year-old man was traveling the backcountry alone, wearing snowshoes, and studying mountain lions. He triggered a small avalanche that swept him over a small icefall. The next day rescuers found him dead. He was totally buried, except for part of his pack which was exposed. The avalanche released on buried surface hoar.

February 25, Sneffels Range near Telluride, CO: A 35-year-old backcountry skier triggered a large avalanche and was killed when it swept him into thick trees. Companions found him with a beacon within 10 minutes, buried less than a foot, but already dead.

February 29, Teton Range, WY: Two snowmobilers triggered a huge avalanche on Dry Ridge Mountain on the west slope of the Tetons. The avalanche fractured 3-6 feet deep, was about 3/4 mile wide, and fell 2,800 feet vertical and about 1 mile slope distance. One man was caught, broke his leg when swept into a tree, but survived. The other, age 21, was killed and remains buried under debris that is up to 50 feet deep. The avalanche probably ran on surface hoar.

February 29, Mt. Rainier, WA: Two climbers, ages 25 and 27, triggered an avalanche while descending the Fuhrers Finger. It swept them over cliffs and down 2,700 vertical feet. Park Rangers recovered their bodies on March 10.

Through February, 84 incidents have led to 103 people caught, 25 partly buried, 20 buried, 13 injured, and 12 killed. Four vehicles, one lift, and two property sites have been damaged. Damage estimate is \$55,000 for the year.

FEBRUARY 1992  
SUMMARY OF WEATHER AND SNOW CONDITIONS

ALPENTAL, WASH	37.0	.10	9	18	3.60	1.02	18	7	7	3	1	76	22	48	59	38.7M	30.0M	34.3M	12.4M	39M	18M	--	--	--
ALPINE MEADOWS, CAL	97.0	.10	22	15	13.67	2.23	20	18	15	9	4	75	17	27	50	38.5	27.4	33.0	26.8	103	91	65	70	3
ALYESKA, ALASKA	99.1	.06	26	28	7.38	2.40	28	10	8	5	1	137	28	107	114	21.5	12.6	17.1	3.4	0	0	13	110	23
CRYSTAL MTN 1, WASH	47.7	.08	10	18	5.36	1.17	22	11	8	3	0	61	21	41	48	40.5	28.3	34.4	14.7	56	38	45	270	22
CRYSTAL MTN 2, WASH	41.0	.09	9	22	3.75	.90	22	10	9	3	0	86	22	66	72	36.4	26.3	31.4	--	--	--	--	--	--
EAGLECREST, ALASKA	32.0	.12	7	5	5.39	1.35	5	13	8	3	2	57	17	30	46	32.8	23.2	28.0	--	--	--	--	--	--
HEAVENLY VALLEY, CAL	36.0	.09	12	15	3.37	1.50	15	13	3	1	1	52	16	30	40	38.7	19.6	29.2	--	--	--	--	--	--
JUNE MOUNTAIN, CALIF	82.5	--	24	15	--	--	--	--	--	--	--	71	15	28	48	40.7	19.8	30.2	--	--	--	--	--	--
MAMMOTH MTN, CALIF	73.0	--	22	11	--	--	--	--	--	--	--	75	16	15	44	34.5M	17.4M	25.9M	--	--	--	--	--	--
MT. HOOD MDWS, ORE.	50.5	.15	8	19	10.58	2.00	20	16	11	6	4	84	22	62	69	42.1	30.2	36.2	12.2	40	25	45	270	20
MT. RAINIER PARADISE	62.2	.12	13	21	9.00	1.80	22	15	8	6	2	152	22	122	131	40.3	28.0	34.2	6.5	11	3	26	280	20
SNOQUALMIE PASS I-90	43.0	.08	11	19	4.80	1.42	22	9	8	2	1	65	21	46	51	40.5	29.4	35.0	9.2	24	9	--	--	--
SQUAW VALLEY, CALIF	83.4	.06	24	15	8.66	2.09	20	14	11	6	2	67	17	24	40	41.4	25.2	33.3	--	--	--	--	--	--
STEVENS PASS 5E WASH	35.0	.21	14	19	9.55	2.48	19	10	9	7	4	83	19	66	73	35.1	28.0	31.5	10.0	43	12	39	260	22
SUGAR BOWL, CALIF	130.0	--	24	15	--	--	--	--	--	--	--	122	20	50	88	39.4	25.2	32.3	15.1M	61M	34M	40	220	14

GE--GREATER THAN OR EQUAL TO



U.S. FOREST SERVICE  
WESTWIDE WEATHER AND AVALANCHE NETWORK  
FORT COLLINS, COLORADO

FEBRUARY 1992  
AVALANCHE SUMMARY

AREA	TOTAL		TOTAL		DATES OF		NUMBER OF DAYS WITH		TYPE OF		AVALANCHE		FRACTURE LINE HEIGHTS IN FEET		VERTICAL DESCENT IN FEET				AVALS ACROSS MAJOR ACCESS ROADS NO.			
	THIS MONTH NO.	THIS WINTER NO.	F I R S T	L A S T	MAX IN ONE DAY NO.	D A T E	A V S L F S	S L F S	A R T I F C L	N A T U R A L	S L A B S	H A R D	S O F T	L O O S E	GE 2	GE 4	GE 6	GE 200		GE 500	GE 1000	MAX FEET
-----NUMBER-----												-NUMBER-		---NUMBER---								

CENTRAL AND SOUTHERN ROCKY MOUNTAINS

ARAPAHOE BASIN, COLO	21	55	8	28	4	28+	8	0	13	8	3	13	1	4	16	2	0	21	12	4	1100	0
ASPEN SNOWMASS, COLO	22	36	13	29	8	17	8	0	20	2	3	19	0	0	16	6	1	18	2	2	2700	0
ASPEN HIGHLANDS, COL	39	85	9	28	13	17	11	0	8	31	0	38	0	1	5	0	0	15	11	6	1500	0
BERTHOUD PASS, COLO	9	38	9	26	4	25	4	0	1	8	0	9	0	0	6	0	0	9	6	0	500	0
BERTHOUD PASS U.S.40	1	5	24	24	1	24	1	0	1	0	0	1	0	0	1	0	0	0	0	0	125	1
BRECKENRIDGE, COLO	3	16	15	22	1	22+	3	0	0	3	1	2	0	0	3	0	0	2	1	0	500	0
CRESTED BUTTE, COLO	6	16	14	17	3	14	3	0	6	0	0	3	0	3	1	0	0	6	1	1	1000	0
GOTHIC, COLO	52	97	2	28	14	14	13	0	0	52	0	40	0	12	28	3	0	51	30	7	1800	0
LOVELAND PASS U.S. 6	6	6	24	25	4	25	2	0	5	1	1	5	0	0	3	2	0	5	1	0	700	1
MONARCH, COLORADO	2	14	17	24	1	24+	2	0	2	0	1	1	0	0	2	1	0	0	0	0	0	0
RED MTN PASS U.S.550	5	12	13	23	2	14+	3	0	0	5	0	4	0	1	0	0	0	5	1	1	1800	5
SKI COOPER, COLO	2	3	14	28	1	28+	2	0	2	0	1	1	0	0	2	1	1	2	0	0	450	0
SUNLIGHT, COLORADO	2	3	14	14	2	14	1	0	2	0	0	1	0	1	0	0	0	2	1	0	500	0
TAOS, NEW MEXICO	15	15	17	17	15	17	1	0	15	0	0	15	0	0	3	0	0	14	1	0	500	0
TELLURIDE, COLO	26	36	14	26	13	14	6	0	24	2	0	25	0	1	18	0	0	13	2	1	1100	0
URAD MINE, COLO	3	6	18	19	2	19	2	0	2	1	0	3	0	0	2	2	0	3	3	1	1000	0
VAIL, COLO	13	15	12	22	5	15	5	0	11	2	0	13	0	0	6	0	0	6	1	1	1000	0
WINTER PARK S.A., CO	13	17	18	29	5	24	5	0	5	8	0	8	5	0	7	1	1	8	0	0	400	0
WOLF CREEK, COLO	41	106	12	17	20	17	4	0	41	0	0	41	0	0	31	0	0	15	0	0	350	0

INTERMOUNTAIN

BIG MOUNTAIN, MONT	2	32	19	19	2 19	1	0	2	0	0	2	0	0	0	0	0	0	0	0	150	0
BIG SKY, MONT	38	135	14	26	8 23+	10	0	35	3	0	38	0	0	2	0	0	37	18	3	1100	0
BRIDGER BOWL, MONT	45	216	11	22	29 17	5	0	45	0	2	43	0	0	3	0	0	44	34	9	1300	0
GRAND TARGHEE, IDAHO	11	14	18	22	7 22	2	0	11	0	0	11	0	0	9	1	0	10	7	0	900	0
JACKSON HOLE, WYO	39	90	5	29	8 20	17	0	35	4	0	37	2	0	22	3	0	38	18	3	1200	0
PARK WEST, UTAH	17	23	14	29	7 17	8	0	16	1	3	14	0	0	13	1	0	11	2	0	600	0
SOLITUDE, UTAH	209	219	11	26	52 17	9	0	179	30	1	204	0	4	96	2	0	185	56	4	1200+	0
SUN VALLEY, IDAHO	11	11	20	29	6 20	5	0	7	4	1	8	2	0	11	4	4	6	4	2	2500	0
TETON PASS, WYO 22	4	8	20	21	3 21	2	0	4	0	0	4	0	0	4	0	0	3	1	1	2100	1

WEST COAST

ALPENTAL, WASH	26	108	12	21	9 21+	4	0	26	0	0	24	0	2	8	0	0	25	9	3	1100	0
ALPINE MEADOWS, CAL	369	434	10	20	89 15	11	0	342	27	0	363	6	0	86	6	0	324	62	2	1000	2
ALYESKA, ALASKA	44	194	10	28	24 28	5	0	34	10	2	42	0	0	30	6	1	44	39	31	1800+	0
CRYSTAL MTN, WASH	128	431	1	27	40 21	10	0	120	8	0	117	0	11	9	1	0	117	52	3	1000	0
HEAVENLY VALLEY, CAL	37	39	11	19	12 15	6	0	36	1	0	36	0	1	10	0	0	36	9	1	1000	0
JUNE MOUNTAIN, CALIF	15	22	11	15	9 11	3	0	15	0	0	15	0	0	2	1	0	7	2	1	2500	0
KIRKWOOD MDWS, CAL	108	173	6	22	24 15	12	0	98	10	19	86	0	3	64	14	0	86	34	8	1200+	0
MT ROSE/SLIDE MT, NV	47	47	11	20	11 20	7	1	46	1	2	44	1	0	29	9	1	41	31	0	900	0
MT. HOOD MEADOWS	83	219	1	23	15 18	14	0	82	1	0	80	3	0	3	1	0	61	37	4	3000	0
MT. RAINIER, WASH	4	4	23	23	4 23	1	0	3	1	0	0	4	0	0	0	0	1	0	0	200	3
SNOQUALMIE PASS I-90	2	35	18	21	1 21+	2	0	1	1	0	0	0	2	0	0	0	2	1	0	500	0
SQUAW VALLEY, CALIF	125	164	6	21	32 15	13	0	120	5	3	120	0	2	33	6	0	117	34	4	1100	0
STEVENS PASS U.S. 2	4	8	18	18	4 18	1	0	4	0	0	4	0	0	0	0	0	4	4	0	900	0
SUGAR BOWL, CALIF	90	101	10	19	38 15	7	0	90	0	3	87	0	0	33	8	5	59	12	4	1000	0

-- = DATA INCOMPLETE OR MISSING  
GE = GREATER THAN OR EQUAL TO  
+ = ALSO OCCURRED ON OTHER DATES